A NEVV BOOKE of Gauging.

Very usefull and necessary for all Vintners, Salters, Bruers, Coopers, and all others that deale in liquid commodities, *in all Cities, and Townes throughout the whole Kingdome,*

Wherby any one that can but adde and *substract may (by a Ruler of foure foote long,* having one side divided into inches, and each inch divided into Ten parts) very easily and exactly gauge any Wine, Oile, Ale or Beere vessell, according to that taught by that famous *Geometrician* of worthie memorie, M. *Henry Briggs* in his Treatise of *Arithmetica Logarithmica*.

By *Henry Bond*, practicioner in the *Mathematicks*, and Reader of *Navigation* to the *Mariners* of the Kings Maiesties Navy at *Chatham*.

LONDON,
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A

TO THE RIGHT WORSHIPFVL

Sir HENRY PALMER Knight, Controwler of the Kings Maieſties NAVIE.

RIGHT WORSHIPFVLL,

YOur loue vnto all good learning appeares by your owne vnderſtanding in the Mathematickes, and by the encouragement that you euery way giue vnto thoſe that are practitioners in thoſe Arts, my ſelfe hauing good experience thereof, in that ſmall period of time that I haue liued here, as alſo by your care for thoſe his Maieſties ſeruants heere vnder your Controwle (viz. Thoſe of them that doe belong to his Maieſties Shippes) that they may bee inſtructed in the Art of Navigation, and ſo be enabled for future times and occaſions to doe his Majeſtie the greater ſeruice which will bee for the honour of his Majeſtie and his kingdomes, which care you haue manifeſted in eſtabliſhing a ſetled courſe for their inſtruction, if they will bee ſo good vnto themſelues as to make vſe of it, all which hath emboldened me to preſume to preſent you with this ſmall (yet very vſefull and neceſſary) Treatiſe of gauging, and to ſhelter it vnder your protection againſt all enuious detractors, not

doubting but that according to your wonted clemencie you will be pleased to accept it (although a subiect farre vnworthy of so worthy a Patron*) yet as a testimony of my acknowledgement of that obliged seruice that I alwayes owe vnto your Worship and am readie prest to performe: and so I humbly take my leaue from*

Chattham, *this* 14 *of* Ianuary 1633.

Your Worships in all affectionate and dutifull seruice to command HENRY BOND.

FOr this manner Gauging, I haue computed 3 Tables hereafter following. The first a Gauge Table for wine, and oyle measure, beginninig at 1 inches Diameter, and ending at 47 inches Diameter, as they are numbred in the outermost part of the left and right margine of each page; In the first Colume of each page is the number of Inches, In the second Colume is the tenth parts of an Inch if any be, and in the third Colum is the gallon measure if there be any, and in the fourth Colum is the parts of a gallon, to ten thousand parts that doth answere to those inches and tenth parts against which they are set, and in the same manner is the fift and sixth Columes of every page, as the first and second Columes are, and the seventh Colum is gallon measure if any be, and the eight Colum, parts of a gallon to ten thousand parts, and every page containeth sixe inches, three inches on the left hand of the page, and three inches on the right hand, which are distinguished by two black lines betweene them in the midst of the page, the reason of the gallon measure put against the inches and tenth parts, is because if there be a hollow Cilinder of one inch in length, that is of any number of inches and tenth parts Diameter contained in that table, it containeth three times so many gallons, and ten thousand parts of a gallon, as are there set against it: but in the practise and use of those Tables it shalbe sufficient to take them to thousand parts, that is but three figures of the parts and after they are added, to take them but to hundreth

parts, that is, but two figures of the parts: the use of this Table of gallon measure is thus (as shall be more manifest in practice of gauging) having taken the Diameter at the bung and at the head of the vessell in inches and tenth parts of an inch; I seeke the inches and tenth parts in this Table, and take the gallon measure against the Diameter at the bung, and set it downe twise, and that against the Diameter at the head once, and add them together: as for example, Suppose a wine or oyle vessel of 32 inches Diameter at the bung and 18 inches Diameter at the head, against 32 inches I finde 1. 160. that is 1 gallon and $\frac{160}{1000}$ parts 1. 160 against 18 inches I finde 0. 367 that is 0 gallon and $\frac{367}{1000}$ parts which added, the Sum is 2. 687. that is 2 gallons and $\frac{687}{1000}$ parts of a gallon, and so of all other.

The second Table is a Gauge Table for Ale and Beere measure beginning at 4 inches Diameter, and ending at 46 inches Diameter, and is in all respects as the former both for vse or otherwise in the definition, but that there is not the same gallon measure against the same number of inches in it, as is in the former, because the Ale gallon is greater then the wine gallon: as for Example, suppose an Ale or Beere vessell of 32 inches Diameter at the bung, and 18 inches Diameter at the head: against 32 inches, I finde 0. 984 that is 0. gallon and $\frac{984}{1000}$ partes 0. 984. against 18 inches I finde 0 311. that is 0 gallon and $\frac{311}{1000}$ parts, which added the Sum is 2. 279. that is 2 gallons and $\frac{279}{1000}$ parts, for which I take 2. 28. and so of all other.

The

The third Table for diſtinctions ſake, I call a multiplying Table, beginning at 41 and ending at 1000 whoſe vſe is thus, (which ſhall be more manifeſt in the practiſe of gauging) having meaſured the Diameter at the bung and at the head according to the ordinary vſe in inches and tenth parts onely, by one ſingle ruler of foure foote long, of foure tenths of an inch ſquare, having one ſide devided into inches, and each inch divided into ten parts, and the lower end of the ruler vpon that ſide that the inches are at, the beginning of the diviſions is to be cut away a little ſlope about halfe the thickneſs of the ruler, which ruler being thus fitted, marke the ſide of the bung hole in the middeſt with a chalke, or a marking ſtone or a knife: then put in the ruler at the bung hole with the line of inches upward parallell to the diameters of the veſſell, down to the bottome of one of the heads, and marke the inches and tenth parts that are cut by the inſide of the bung hole right under your marke, then turne your ruler likewiſe in the ſame manner unto the other head, and note whether the ſame number of inches & tenth parts that you tooke to the firſt head, doe come right under the marke, in the midſt of the ſide of the bung hole from the bottom of the ſecond head, the which if it doth, then is your marke in the midſt of the length of the veſſell, and that meaſure that you haue taken ſhall ſerue your turne, but if it do not come right under the ſame marke, then ſet a marke right over the place unto which it comes, and then put downe your ruler to the bottom of either of the heads againe with

the line of inches upward, and marke the inches and tenth parts cut by the inside of the bung-hole right in the midst betweene your two marks, and that number of inches and tenth parts double, accounting them as if they were all vnites, or as if they were ten times as much as they are; as for 32. take 320. and for 37 $\frac{9}{10}$ take 379 and so of all other, which seeke in the multiplying Table, and take the number right against it, then add the Diameter at the head and at the bung in inches and tenth parts together, and seeke their summe in the multiplying Table, and take the number right against it, and substract it from the numbers of the former, and keepe the remainer, and seeke it or the neerest to it in the multiplying Table, and set downe the number that neerest answers to it by the end of it, & substract the gallon measure of the bung and the head added together from it, and set downe the difference under it, then goe to the multiplying Table, and seeke the gallon measure of the head and the bung, as if it were so many vnites, and take the number right against it, and set it under the first remainer, then seeke the last difference in the multiplying Table, and take for the number right against it, the remainer of the first figure to the right hand to 10. and the remainer of all the other to 9. and add them to the two former, and the summe cutting of 2 figures to the right hand shall be the number of gallons that the vessell containes, and those two figures cut off, shall be so many hundreth parts of a gallon, remembring alwayes that if your last number that you take, your remainers to 9, haue not so many places

to

to the left hand, as one or both of the other haue, you muſt make it to haue as many by putting to it one 9. or two 9. according as it wants, and if by that meanes there ariſe one figure more, *viz*: a vnite in the ſum of your addition to the left hand, then there is in either of your two former numbers that you added, neglect it as nothing, and account not of it, but if there ariſe a figure of 2. keepe one vnite, and neglect the other: Leaſt any one that may haue occaſion to make uſe of gauging, ſhould be to ſeeke to take the diameter of a veſſell at the bung and at the head by this gauging ruler, I will here ſet downe the manner, although ſomewhat out of its due place, put the ruler in at the bung hole with the end that is cut away downward preciſely perpendicular as neere as you can, and marke the number of inches and tenth parts out by the inſide of the bung-hole, and that ſhall bee the diameter at the bung, then ſet the ſame end downward right over the center of the head, and marke the inches and tenth partes cut by the inſide of the boordes at the vpper part of the head, and that ſhalbe the diameter at the head.

And now I come to the practice of Gauging according to theſe tables by examples of ſeverall veſſells both of Wine, Oyle, Ale and Beere.

Example 1. *of a wine veſſell.*

Suppoſe a wine veſſell of 32 inches diameter at the bung, and 18 inches diameter at the head, and the meaſure or length of the diagonall line from the midſt of

the

the side of the bung hole to the bottom of one of the heads in the inside of the vessell is 32 inches and neere one quarter of a tenth part, which being doubled is 64 and allmost halfe a tenth part, for which I looke in the multiplying table at 640. against which I finde 20480. if it had bin one tenth part, I must haue taken 641. now it being not halfe one tenth part, I take but the $\frac{1}{3}$ of 64. which is 21 and add it to 28480. and the whole is 20501. and so of all other, then I add the diameter at the head 18. to the diameter at the bung 32 and the whole is 50. for which I take 500. and looke it in the multiplying Table, and right against it, I finde 12500. which I substract from the former which was

	20501	640.
and the remainer is as you see	12500 / 8001	100 / 400
which I seeke in the multiplying	3618	269
Table, and the neerest to it is	9142	131
at 400 which I set downe by the	107/61	

side of it then I looke in the gauge table for wine measure, and take the gallon measure for 32 inches the Diameter at the bung, which is 1.160.
and set it downe twise, 1.160.
and the gallon measure for . . . .
the Diameter at the head, which . . . .
is 18 inches against it, is 0. 367.
which I add, and the sum is 2. 687.
for which I take 269. for I alwayes make the second figure of the parts of a gallon one vnite more then it is if the third figure be a 7. or aboue, which 269 I substract from 400, and the difference is as you see

131. then I ſeeke in the multiplying Table for 269. and take the number right againſt it, which is 3618. which I ſet under 8001. then I ſeeke for 131. in the multiplying Table, and againſt it, I find 858. which hath one place leſſe then either of the former numbers and according to the former direction, I take the remainer of each of theſe figures to 9. and of the laſt to 10. and put one 9 in the higheſt place to the left hand and it is 9142. Which I add vnto the other two numbers and the whole is (neglecting one of the vnites that doth ariſe in the higheſt place to the left hand which you muſt alwayes doe when there doth ariſe a 2 in the higheſt place) 107|61 that is 107. gallons and 61 hundreth parts of a gallon for the content of that veſſell, in wine meaſure, alwayes you muſt remember to cut of two figures to the right hand for they are hundreth partes of a gallon.

Example. 11. *Of a wine veſſell.*

Suppoſe a wine veſſell of 18 1/10 inches diameter at the bung and 16 1/10 inches at the head, and the meaſure of the diagonall line from the middeſt of the bung hole to the bottom of the head in the inſide of the veſſell is 25 5/10 inches I demand the content of the veſſell.

The double of the diagonall line is 57 viz: 570. the diameter of the head and the bung in inches and tenth parts added is 346. which I proceede with according to the firſt example as heere you ſee.

againſt	570	is	16245.
againſt	346	is	5985.

againſt	453	10260.	
gallon meaſure	107	572	
18 $\frac{1}{10}$ is 0.379	346	94015	
18 $\frac{1}{10}$ 0.379		48	47.
gallon meaſure			
of 16 $\frac{1}{10}$ 0.311.			

Sum is 1069 for which I take 107 and I finde 48. gallons and 47 hundreth parts of a gallon for the true content of that veſſell.

Example. III. *Of a wine veſſell.*

Suppoſe a wine veſſell of 17 $\frac{1}{10}$ inches diameter at the bung and 15 $\frac{1}{10}$ inches diameter at the head, and the diagonall line from the middeſt of the bung hole to the bottom of one head is 22 $\frac{1}{10}$ inches, the double whereof is 45. viz: 450 and the diameter at the head and the bung in inches and tenth parts added, is 33. viz: 330 which I proceed with all as with the firſt as heere you ſee.

againſt	450	is	10125	
againſt	330	is	5445	
againſt		306	4680	
gallon meaſure		96	460	
17 $\frac{1}{10}$ 0.339		210	7795	
17 $\frac{1}{10}$ 0.339			29	35
gallon meaſure				
15 $\frac{1}{10}$ 0.279				

Summe is 0957 for which I take 96. and I find 29 gallons and 35 hundreth parts of a gallon for the true content of that veſſell.

Example

Example. IIII. *Of an oile veſſell.*

Suppoſe a great oile veſſell of 42 $\frac{3}{10}$ inches diameter at the bung and 31 $\frac{3}{10}$ inches diameter at the head and the diagonall line from the middeſt of the bung hole to the bottome of one of the heads is 50 $\frac{9}{10}$ inches, I demand the content of this great veſſell?

Here becauſe the diagonall is aboue 50. inches, wee cannot double it, but for our firſt worke, we take the diagonall once, and take halfe the diameters at the bung, and at the head in inches, and tenth parts, and adde them together; but we take the gallon meaſure for them as before, and having found the content according unto that, we double it, for to finde the true content of the veſſell.

the $\frac{1}{2}$ of 42 $\frac{3}{10}$ is 21 $\frac{1}{10}$
the $\frac{1}{2}$ of 31 $\frac{3}{10}$ is 15 $\frac{4}{10}$
which two added are 367.

According to which I proceed.

againſt	509	is	12954
againſt	367	is	6734
againſt		353	6220
gallon meaſure		514	13209
42 $\frac{3}{10}$	2.018	161	98704
42 $\frac{3}{10}$	2.018		181|33
gallon meaſure			2
31 $\frac{3}{10}$	1.103		362 66

Summe is 5.139 for which I take 514 and I find 362 gallons and 66 hundreth parts of a gallon for the content of that great oile veſſell.

Example

Example V. *Of a wine veſſell.*

Suppoſe a wine veſſell of 28 $\frac{6}{10}$ inches diameter at the bung and 21 $\frac{8}{10}$ inches diameter at the head, and diagonall line from the middiſt of the bung hole to the bottom of one of the heads is 35 inches I demand the content of that veſſell.

The double of 35 is 70 viz 700 and the diameter of the bung and the head added is 50 $\frac{4}{10}$ viz. 504 with which I proceed as before.

Againſt 700 is		24500
againſt 504 is		12700
againſt	486	11800
gallon meaſure	239	2856
28 $\frac{6}{10}$ 0.927	247	96950
28 $\frac{6}{10}$ 0.927		1116 $\frac{96}{247}$
gallon meaſure		
21 $\frac{8}{10}$ 0.538		

Summe is 2.392.

And I finde 116 gallons and 96 hundreth parts of a gallon for the true content of that veſſell.

Example VI. *Of a wine veſſell.*

Suppoſe a wine veſſell of 31 $\frac{7}{10}$ inches diameter at the bung and 22 $\frac{2}{10}$ inches diameter at the head, and the diagonall line from the middeſt of the bung-hole to the bottom of one of the heads 34 $\frac{7}{10}$ inches, I demand the content, firſt double 34 $\frac{7}{10}$ it is 694 and the diameters at the bung and at the head are 546.

againſt 694 is	2481

againſt

againſt 546 is			14905
againſt		428	9176
gallon meaſure		287	4118
31 7/10	1.138	141	5006
31 7/10	1.138		123|00
gallon meaſure			
22 2/10	0594.		

Summe is 2.870. I find 123 gallons for the true content of that veſſell.

Example VII. *Of a Ale or Beere veſſell.*

Suppoſe a beere veſſell of 18 4/10 inches diameter at the bung and 16 4/10 inches diameter at the head and the diagonall from the middeſt of the bung hole to the bottom of one of the heads is 20 4/10 inches I demand the content of this veſſell in beere meaſure.

The double of 20 4/10 is 408 the diameter of the head and bung added is 348. I muſt looke the gallon meaſure in the gauge Table for ale and beere.

againſt 408 is			8323
againſt 348 is			6055
againſt		213	2268
gallon meaſure		91	414
18 4/10	0. 325	121	9256
18 4/10	0. 325	19	1938
gallon meaſure			
16 4/10	0. 258		

Summe is 0.908 for which I take 91 and I find 19 gallons and 38 hundreth parts of a gallon for the content of that veſſell in beere meaſure.

Example

Example VIII. *Of an Ale or Beere veſſell.*

Suppoſe an ale veſſell of 23 $\frac{5}{10}$ inches diameter at the bung and 21 $\frac{5}{10}$ inches diameter at the head and the diagonall line from the middeſt of the bung hole to the bottom of one of the heads is 27 $\frac{5}{10}$ inches I demand the content in ale meaſure the double of 27 $\frac{5}{10}$ is 544 the diameters at the bung and at the head is 448.

againſt 544 is		14796
againſt 448 is		10035
againſt	309	4761
gallon meaſure	150	1123
23 $\frac{5}{10}$ 0.535	159	8736
23 $\frac{5}{10}$ 0.535		46 | 22
gallon meaſure		
21 $\frac{5}{10}$ 0.432		
Sum is 1.502		

And I find 46 gallons and 22 hundreth parts of a gallon for the true content of that veſſell in Ale meaſure.

And this I ſuppoſe to bee ſufficient to inſtruct any one in this way of gauging (although but of a reaſonable capacitie) which is exact according to Art, (approved by that memorable worthie in *Geometry*, M. *Henry Brigges*, and ſince his death, by that Reverend Divine M *William Oughtred*, who invented the gallon meaſure with Invention (the computing of it being concealed) was the occaſion of this Treatiſe) wrought with more eaſe then it was, according to the erroneous way formerly vſed.

And ſo I concludethis Treatiſe of Gauging, deſiring it may be accepted as it is meant.

Theſe forenamed gauging Inſtruments are made in braſſe by John Bleighton *in* Towre-ſtreete *neere the Bull head Tayerne: and ſo ſold by* Thomas Browne, *in* Fen-Church ſtreet *neere* Northumberland Alley. *In the next page following begins the Gauge table for wine meaſure, beginning at* 2 *inches, and ending at* 47. *inches.*

Inches

Inch	pts.	G:	pts.	Inch	pts.	G:	pts.
02	1	0	0050	05	1	0	0294
02	2	0	0055	05	2	0	0306
02	3	0	0060	05	3	0	0318
02	4	0	0065	05	4	0	0330
02	5	0	0070	05	5	0	0342
02	6	0	0076	05	6	0	0355
02	7	0	0082	05	7	0	0368
02	8	0	0088	05	8	0	0381
02	9	0	0095	05	9	0	0394
03	0	0	0102	06	0	0	0407
03	1	0	0109	06	1	0	0421
03	2	0	0116	06	2	0	0435
03	3	0	0123	06	3	0	0449
03	4	0	0131	06	4	0	0464
03	5	0	0138	06	5	0	0478
03	6	0	0146	06	6	0	0493
03	7	0	0155	06	7	0	0508
03	8	0	0163	06	8	0	0524
03	9	0	0172	06	9	0	0539
04	0	0	0181	07	0	0	0555
04	1	0	0190	07	1	0	0571
04	2	0	0199	07	2	0	0586
04	3	0	0209	07	3	0	0603
04	4	0	0219	07	4	0	0620
04	5	0	0229	07	5	0	0637
04	6	0	0239	07	6	0	0654
04	7	0	0250	07	7	0	0671
04	8	0	0260	07	8	0	0689
04	9	0	0272	07	9	0	0707
05	0	0	0283	08	0	0	0725

Inch	pts.	G:	pts.	Inch	pts.	G:	pts.
08	1	0	0743	11	1	0	1396
08	2	0	0762	11	2	0	1421
08	3	0	0780	11	3	0	1447
08	4	0	0799	11	4	0	1473
08	5	0	0819	11	5	0	1498
08	6	0	0838	11	6	0	1525
08	7	0	0857	11	7	0	1551
08	8	0	0877	11	8	0	1578
08	9	0	0898	11	9	0	1604
09	0	0	0918	12	0	0	1631
09	1	0	0938	12	1	0	1659
09	2	0	0959	12	2	0	1686
09	3	0	0980	12	3	0	1714
09	4	0	1001	12	4	0	1742
09	5	0	1022	12	5	0	1770
09	6	0	1044	12	6	0	1799
09	7	0	1066	12	7	0	1827
09	8	0	1088	12	8	0	1856
09	9	0	1110	12	9	0	1885
10	0	0	1133	13	0	0	1915
10	1	0	1156	13	1	0	1945
10	2	0	1179	13	2	0	1974
10	3	0	1202	13	3	0	2004
10	4	0	1225	13	4	0	2035
10	5	0	1249	13	5	0	2065
10	6	0	1273	13	6	0	2096
10	7	0	1297	13	7	0	2127
10	8	0	1321	13	8	0	2158
10	9	0	1346	13	9	0	2189
11	0	0	1371	14	0	0	2221

Inch	pts.	G:	pts.	Inch	pts.	G:	pts.
14	1	0	2253	17	1	0	3313
14	2	0	2285	17	2	0	3352
14	3	0	2317	17	3	0	3391
14	4	0	2350	17	4	0	3431
14	5	0	2382	17	5	0	3471
14	6	0	2415	17	6	0	3510
14	7	0	2449	17	7	0	3550
14	8	0	2482	17	8	0	3590
14	9	0	2516	17	9	0	3631
15	0	0	2550	18	0	0	3672
15	1	0	2584	18	1	0	3712
15	2	0	2618	18	2	0	3754
15	3	0	2653	18	3	0	3795
15	4	0	2687	18	4	0	3837
15	5	0	2722	18	5	0	3878
15	6	0	2758	18	6	0	3921
15	7	0	2793	18	7	0	3963
15	8	0	2829	18	8	0	4005
15	9	0	2865	18	9	0	4048
16	0	0	2901	19	0	0	4091
16	1	0	2937	19	1	0	4134
16	2	0	2974	19	2	0	4177
16	3	0	3011	19	3	0	4221
16	4	0	3048	19	4	0	4265
16	5	0	3085	19	5	0	4309
16	6	0	3123	19	6	0	4353
16	7	0	3160	19	7	0	4398
16	8	0	3198	19	8	0	4443
16	9	0	3236	19	9	0	4488
17	0	0	3275	20	0	0	4533

Inch	pts.	G:	pts.	Inch	pts.	G:	pts.
20	1	0	4578	23	1	0	6047
20	2	0	4624	23	2	0	6100
20	3	0	4670	23	3	0	6152
20	4	0	4715	23	4	0	6205
20	5	0	4762	23	5	0	6258
20	6	0	4809	23	6	0	6312
20	7	0	4856	23	7	0	6365
20	8	0	4903	23	8	0	6419
20	9	0	4950	23	9	0	6473
21	0	0	4998	24	0	0	6527 24
21	1	0	5045	24	1	0	6582
21	2	0	5093	24	2	0	6637
21	3	0	5141	24	3	0	6692
21	4	0	5190	24	4	0	6747
21	5	0	5238	24	5	0	6802
21	6	0	5287	24	6	0	6858
21	7	0	5336	24	7	0	6914
21	8	0	5385	24	8	0	6970
21	9	0	5435	24	9	0	7026
22	0	0	5485	25	0	0	7083 25
22	1	0	5535	25	1	0	7140
22	2	0	5585	25	2	0	7197
22	3	0	5635	25	3	0	7254
22	4	0	5686	25	4	0	7311
22	5	0	5737	25	5	0	7369
22	6	0	5788	25	6	0	7427
22	7	0	5838	25	7	0	7485
22	8	0	5891	25	8	0	7543
22	9	0	5943	25	9	0	7602
23	0	0	5995	26	0	0	7661 26

Inch	pts.	G:	pts.	Inch	pts.	G:	pts	
26	1	0	7720	29	1	0	9597	
26	2	0	7779	29	2	0	9663	
26	3	0	7839	29	3	0	9727	
26	4	0	7898	29	4	0	9796	
26	5	0	7958	29	5	0	9862	
26	6	0	8019	29	6	0	9929	
26	7	0	8079	29	7	0	9997	
26	8	0	8140	29	8	1	0064	
26	9	0	8200	29	9	1	0132	
27	27	0	8262	30	0	1	0199	30
27	1	0	8323	30	1	1	0268	
27	2	0	8384	30	2	1	0336	
27	3	0	8446	30	3	1	0405	
27	4	0	8508	30	4	1	0473	
27	5	0	8570	30	5	1	0542	
27	6	0	8633	30	6	1	0612	
27	7	0	8696	30	7	1	0681	
27	8	0	8758	30	8	1	0751	
27	9	0	8822	30	9	1	0821	
28	28	0	8885	31	0	1	0891	31
28	1	0	8948	31	1	1	0961	
28	2	0	9012	31	2	1	1032	
28	3	0	9076	31	3	1	1103	
28	4	0	9141	31	4	1	1174	
28	5	0	9205	31	5	1	1245	
28	6	0	9270	31	6	1	1317	
28	7	0	9335	31	7	1	1388	
28	8	0	9400	31	8	1	1460	
28	9	0	9465	31	9	1	1532	
29	29	0	9531	32	0	1	1605	32

Inch	pts.	G:	pts.	Inch	pts.	G:	pts	
32	1	1	1678	35	1	1	3962	
32	2	1	1750	35	2	1	4042	
32	3	1	1823	35	3	1	4122	
32	4	1	1897	35	4	1	4202	
32	5	1	1970	35	5	1	4282	
32	6	1	2044	35	6	1	4363	
32	7	1	2118	35	7	1	4444	
32	8	1	2192	35	8	1	4525	
32	9	1	2267	35	9	1	4606	
33	33	0	1	2342	36	0	1	4688	36
33	1	1	2416	36	1	1	4769	
33	2	1	2492	36	2	1	4851	
33	3	1	2567	36	3	1	4933	
33	4	1	2642	36	4	1	5016	
33	5	1	2718	36	5	1	5099	
33	6	1	2794	36	6	1	5182	
33	7	1	2871	36	7	1	5264	
33	8	1	2947	36	8	1	5348	
33	9	1	3024	36	9	1	5431	
34	34	0	1	3101	37	0	1	5515	37
34	1	1	3178	37	1	1	5599	
34	2	1	3255	37	2	1	5683	
34	3	1	3333	37	3	1	5767	
34	4	1	3411	37	4	1	5852	
34	5	1	3489	37	5	1	5938	
34	6	1	3567	37	6	1	6023	
34	7	1	3646	37	7	1	6107	
34	8	1	3725	37	8	1	6193	
34	9	1	3804	37	9	1	6278	
35	35	0	1	3883	38	0	1	6365	38

nch	pts.	G:	pts.	Inch	pts.	G:	pts	
38	1	1	6451	41	1	1	9144	
38	2	1	6538	41	2	1	9238	
38	3	1	6625	41	3	1	9331	
38	4	1	6711	41	4	1	9424	
38	5	1	6798	41	5	1	9518	
38	6	1	6886	41	6	1	9613	
38	7	1	6973	41	7	1	9707	
38	8	1	7061	41	8	1	9802	
38	9	1	7149	41	9	1	9896	
39 39	0	1	7238	42	0	1	9992	42
39	1	1	7326	42	1	2	0087	
39	2	1	7415	42	2	2	0182	
39	3	1	7504	42	3	2	0278	
39	4	1	7593	42	4	2	0374	
39	5	1	7683	42	5	2	0470	
39	6	1	7772	42	6	2	0567	
39	7	1	7862	42	7	2	0663	
39	8	1	7952	42	8	2	0760	
39	9	1	8042	42	9	2	0857	
40 40	0	1	8133	43	0	2	0955	43
40	1	1	8224	43	1	2	1052	
40	2	1	8315	43	2	2	1150	
40	3	1	8406	43	3	2	1248	
40	4	1	8497	43	4	2	1347	
40	5	1	8589	43	5	2	1446	
40	6	1	8681	43	6	2	1544	
40	7	1	8773	43	7	2	1643	
40	8	1	8865	43	8	2	1742	
40	9	1	8958	43	9	2	1842	
41 41	0	1	9051	44	0	2	1942	44

Inch	pts.	Gr.	pts.
43	1	2	2041
44	2	2	2141
44	3	2	2241
44	4	2	2342
44	5	2	2442
44	6	2	2543
44	7	2	2645
44	8	2	2746
44	9	2	2848
45	45	0	2	2950
45	1	2	3052
45	2	2	3155
45	3	2	3257
45	4	2	3359
45	5	2	3462
45	6	2	3565
45	7	2	3669
45	8	2	3773
45	9	2	3877
46	46	0	2	3981
46	1	2	4085
46	2	2	4190
46	3	2	4295
46	4	2	4400
46	5	2	4505
46	6	2	4611
46	7	2	4716
46	8	2	4822
46	9	2	4929
47	47	0	2	5935

Heere followeth in the next Page, the Gauge Table for Ale and Beere, beginning at 4 inches, and ending at 46 inches.

Inch	pts.	G:	pts.	Inch	pts.	G:	pts.
04	1	0	0161	07	1	0	0484
04	2	0	0169	07	2	0	0498
04	3	0	0177	07	3	0	0512
04	4	0	0186	07	4	0	0526
04	5	0	0194	07	5	0	0541
04	6	0	0203	07	6	0	0555
04	7	0	0212	07	7	0	0570
04	8	0	0221	07	8	0	0585
04	9	0	0230	07	9	0	0600
05	0	0	0240	08	0	0	0615
05	1	0	0250	08	1	0	0630
05	2	0	0260	08	2	0	0646
05	3	0	0270	08	3	0	0664
05	4	0	0280	08	4	0	0678
05	5	0	0290	08	5	0	0694
05	6	0	0301	08	6	0	0711
05	7	0	0312	08	7	0	0728
05	8	0	0323	08	8	0	0744
05	9	0	0334	08	9	0	0761
06	0	0	0346	09	0	0	0778
06	1	0	0357	09	1	0	0796
06	2	0	0369	09	2	0	0813
06	3	0	0381	09	3	0	0831
06	4	0	0393	09	4	0	0849
06	5	0	0406	09	5	0	0867
06	6	0	0419	09	6	0	0886
06	7	0	0431	09	7	0	0905
06	8	0	0444	09	8	0	0923
06	9	0	0457	09	9	0	0942
07	0	0	0471	10	0	0	0961

Inch	pts.	G:	pts.	Inch	pts.	G:	pts.	
10	1	0	0981	13	1	0	1650	
10	2	0	1001	13	2	0	1675	
10	3	0	1010	13	3	0	1701	
10	4	0	1040	13	4	0	1727	
10	5	0	1060	13	5	0	1752	
10	6	0	1080	13	6	0	1779	
10	7	0	1101	13	7	0	1805	
10	8	0	1122	13	8	0	1831	
10	9	0	1142	13	9	0	1858	
11	0	0	1163	14	0	0	1884	14
11	1	0	1184	14	1	0	1912	
11	2	0	1206	14	2	0	1939	
11	3	0	1228	14	3	0	1966	
11	4	0	1249	14	4	0	1994	
11	5	0	1271	14	5	0	2022	
11	6	0	1294	14	6	0	2050	
11	7	0	1316	14	7	0	2078	
11	8	0	1339	14	8	0	2106	
11	9	0	1361	14	9	0	2135	
12	0	0	1384	15	0	0	2163	15
12	1	0	1407	15	1	0	2192	
12	2	0	1431	15	2	0	2221	
12	3	0	1455	15	3	0	2251	
12	4	0	1478	15	4	0	2280	
12	5	0	1502	15	5	0	2310	
12	6	0	1526	15	6	0	2340	
12	7	0	1551	15	7	0	2370	
12	8	0	1575	15	8	0	2401	
12	9	0	1600	15	9	0	2431	
13	0	0	1625	16	0	0	2461	16

Inch	pts.	G:	pts.	Inch	pts.	G:	pts.
16	1	0	2492	19	1	0	3508
16	2	0	2523	19	2	0	3545
16	3	0	2555	19	3	0	3582
16	4	0	2586	19	4	0	3619
16	5	0	2618	19	5	0	3656
16	6	0	2650	19	6	0	3694
16	7	0	2682	19	7	0	3734
16	8	0	2714	19	8	0	3770
16	9	0	2746	19	9	0	3808
17	0	0	2779	20	0	0	3846
17	1	0	2818	20	1	0	3885
17	2	0	2844	20	2	0	3924
17	3	0	2878	20	3	0	3962
17	4	0	2911	20	4	0	4002
17	5	0	2945	20	5	0	4041
17	6	0	2978	20	6	0	4080
17	7	0	3012	20	7	0	4120
17	8	0	3047	20	8	0	4160
17	9	0	3081	20	9	0	4200
18	0	0	3115	21	0	0	4241
18	1	0	3150	21	1	0	4281
18	2	0	3185	21	2	0	4322
18	3	0	3220	21	3	0	4363
18	4	0	3255	21	4	0	4404
18	5	0	3291	21	5	0	4445
18	6	0	3326	21	6	0	4486
18	7	0	3362	21	7	0	4528
18	8	0	3399	21	8	0	4570
18	9	0	3435	21	9	0	4612
19	0	0	3471	22	0	0	4654

Inch	pts.	G:	pts.	Inch	pts.	G:	pts.	
22	1	0	4691	25	1	0	6058	
22	2	0	4739	25	2	0	6107	
22	3	0	4782	25	3	0	6155	
22	4	0	4825	25	4	0	6204	
22	5	0	4868	25	5	0	6253	
22	6	0	4911	25	6	0	6302	
22	7	0	4955	25	7	0	6351	
22	8	0	4999	25	8	0	6401	
22	9	0	5043	25	9	0	6451	
23 23	0	0	5087	26	0	0	6500	26
23	1	0	5131	26	1	0	6550	
23	2	0	5176	26	2	0	6601	
23	3	0	5221	26	3	0	6651	
23	4	0	5265	26	4	0	6702	
23	5	0	5311	26	5	0	6753	
23	6	0	5356	26	6	0	6804	
23	7	0	5401	26	7	0	6855	
23	8	0	5447	26	8	0	6907	
23	9	0	5492	26	9	0	6958	
24 24	0	0	5539	27	0	0	7010	27
24	1	0	5585	27	1	0	7062	
24	2	0	5631	27	2	0	7114	
24	3	0	5678	27	3	0	7167	
24	4	0	5725	27	4	0	7219	
24	5	0	5772	27	5	0	7272	
24	6	0	5819	27	6	0	7325	
24	7	0	5867	27	7	0	7378	
24	8	0	5914	27	8	0	7431	
24	9	0	5962	27	9	0	7485	
25 25	0	0	6010	28	0	0	7539	28

Inch	pts.	G:	pts.	Inch	pts.	G:	pts.
28	1	0	7593	31	1	0	9301
28	2	0	7647	31	2	0	9360
28	3	0	7701	31	3	0	9421
28	4	0	7756	31	4	0	9481
28	5	0	7811	31	5	0	9542
28	6	0	7865	31	6	0	9602
28	7	0	7921	31	7	0	9663
28	8	0	7975	31	8	0	9724
28	9	0	8031	31	9	0	9785
29	0	0	8087	32	0	0	9847
29	1	0	8143	32	1	0	9908
29	2	0	8199	32	2	0	9970
29	3	0	8255	32	3	1	0032
29	4	0	8312	32	4	1	0095
29	5	0	8368	32	5	1	0157
29	6	0	8425	32	6	1	0219
29	7	0	8482	32	7	1	0282
29	8	0	8540	32	8	1	0345
29	9	0	8597	32	9	1	0408
30	0	0	8654	33	0	1	0471
30	1	0	8712	33	1	1	0535
30	2	0	8770	33	2	1	0598
30	3	0	8828	33	3	1	0662
30	4	0	8887	33	4	1	0727
30	5	0	8945	33	5	1	0791
30	6	0	9004	33	6	1	0856
30	7	0	9063	33	7	1	0920
30	8	0	9122	33	8	1	0985
30	9	0	9181	33	9	1	1050
31	0	0	9241	34	0	1	1116

Inch	pts.	G:	pts.	Inch	pts.	G:	pts.
34	1	1	1181	37	1	1	3236
34	2	1	1247	37	2	1	3307
34	3	1	1313	37	3	1	3378
34	4	1	1379	37	4	1	3450
34	5	1	1445	37	5	1	3522
34	6	1	1512	37	6	1	3594
34	7	1	1578	37	7	1	3667
34	8	1	1645	37	8	1	3739
34	9	1	1712	37	9	1	3812
35	35	0	1779	38	0	1	3888 38
35	1	1	1847	38	1	1	3958
35	2	1	1914	38	2	1	4032
35	3	1	1982	38	3	1	4105
35	4	1	2050	38	4	1	4178
35	5	1	2118	38	5	1	4253
35	6	1	2188	38	6	1	4327
35	7	1	2255	38	7	1	4402
35	8	1	2324	38	8	1	4476
35	9	1	2393	38	9	1	4551
36	36	0	2462	39	0	1	4626 39
36	1	1	2532	39	1	1	4701
36	2	1	2601	39	2	1	4776
36	3	1	2671	39	3	1	4852
36	4	1	2741	39	4	1	4927
36	5	1	4811	39	5	1	5003
36	6	1	2881	39	6	1	5079
36	7	1	2951	39	7	1	5155
36	8	1	3022	39	8	1	5232
36	9	1	3093	39	9	1	5309
37	37	0	3164	40	0	1	5385 40

Inch	pts.		G:	pts.		Inch	pts.		G:	pts.	
40	1		1	5462		43	1		1	7863	
40	2		1	5540		43	2		1	7946	
40	3		1	5617		43	3		1	8029	
40	4		1	5695		43	4		1	8112	
40	5		1	5772		43	5		1	8196	
40	6		1	5850		43	6		1	8279	
40	7		1	5929		43	7		1	8363	
40	8		1	6007		43	8		1	8448	
40	9		1	6086		43	9		1	8532	
41	0		1	6164		44	0		1	8616	44
41	1		1	6243		44	1		1	8701	
41	2		1	6322		44	2		1	8786	
41	3		1	6402		44	3		1	8871	
41	4		1	6481		44	4		1	8955	
41	5		1	6561		44	5		1	9042	
41	6		1	6641		44	6		1	9128	
41	7		1	6721		44	7		1	9213	
41	8		1	6801		44	8		1	9300	
41	9		1	6882		44	9		1	9387	
42	0		1	6962		45	0		1	9472	45
42	1		1	7043		45	1		1	9550	
42	2		1	7124		45	2		1	9646	
42	3		1	7206		45	3		1	9733	
42	4		1	7286		45	4		1	9820	
42	5		1	7369		45	5		1	9907	
42	6		1	7450		45	6		1	9995	
42	7		1	7533		45	7		2	0083	
42	8		1	7615		45	8		2	0171	
42	9		1	7697		45	9		2	0259	
43	0		1	7780		46	0		2	0347	46

Here followeth the multiplying Table, *from* 41. *to* 1000.

BEcause this multiplying Table, begins but at 41 and that it may happen, that you may haue a number lesse then 41 in gauging of some small vessell, you shall supply it from 5 to 40. in this maner, if you haue 5 looke against 50. and you shall finde 125 of which cut of. or leaue 2 places to the right hand and then you must take 1 and so doe for 6 at 60 for 7 at 70 for 8 at 80 for 9 at 90. and so forward at every tenth line vntill you come to 400. cutting off two figures to the right hand, as if I had 37 I looke at 370 and find 6845 of which I cut of 45 and take onely 68. or if it fall out to be the last number in finding the content of a vessell that I must take the remainer to 10 of 8 and the remainer to 9 of 6 I take 32 insteed of 68.

40		70	
41	84	71	252
42	88	72	259
43	92	73	266
44	96	74	273
45	101	75	281
46	105	76	288
47	110	77	296
48	115	78	304
49	120	79	312
50	125	80	320
51	130	81	328
52	135	82	336
53	140	83	344
54	145	84	352
55	151	85	361
56	156	86	369
57	162	87	378
58	168	88	387
59	174	89	396
60	180	90	405
61	186	91	414
62	192	92	423
63	198	93	432
64	204	94	441
65	211	95	451
66	217	96	460
67	224	97	470
68	231	98	480
69	238	99	490
70	245	100	500

100		130	
101	510	131	858
102	520	132	871
103	530	133	884
104	540	134	897
105	551	135	911
106	561	136	924
107	572	137	938
108	583	138	952
109	594	139	966
110	605	140	980
111	616	141	994
112	627	142	1008
113	638	143	1022
114	649	144	1036
115	661	145	1051
116	672	146	1065
117	684	147	1080
118	696	148	1095
119	708	149	1110
120	720	150	1125
121	732	151	1140
122	744	152	1155
123	756	153	1170
124	768	154	1185
125	781	155	1201
126	793	156	1216
127	806	157	1232
128	819	158	1248
129	832	159	1264
130	845	160	1280

160		190	
161	1296	191	1814
162	1312	192	1842
163	1328	193	1862
164	1344	194	1881
165	1361	195	1901
166	1377	196	1920
167	1394	197	1940
168	1411	198	1960
169	1428	199	1980
170	1445	200	2000
171	1462	201	2020
172	1479	202	2040
173	1496	203	2060
174	1513	204	2080
175	1531	205	2101
176	1548	206	2121
177	1566	207	2142
178	1584	208	2163
179	1602	209	2184
180	1620	210	2205
181	1638	211	2226
182	1656	212	2247
183	1674	213	2268
184	1692	214	2289
185	1711	215	2311
186	1729	216	2332
187	1748	217	2354
188	1767	218	2376
189	1785	219	2398
190	1805	220	2420

220		250	
221	2442	251	3150
222	2464	252	3175
223	2486	253	3200
224	2508	254	3225
225	2531	255	3251
226	2553	256	3276
227	2576	257	3302
228	2599	258	3328
229	2622	259	3354
230	2645	260	3380
231	2668	261	3406
232	2691	262	3432
233	2714	263	3458
234	2737	264	3484
235	2761	265	3511
236	2784	266	3537
237	2808	267	3564
238	2832	268	3591
239	2856	269	3618
240	2880	270	3645
241	2904	271	3672
242	2928	272	3699
243	2952	273	3726
244	2976	274	3753
245	3001	275	3781
246	3025	276	3808
247	3050	277	3836
248	3075	278	3864
249	3100	279	3892
250	3125	280	3920

280		310	
281	3948	311	4836
282	3976	312	4867
283	4004	313	4898
284	4032	314	4929
285	4061	315	4961
286	4089	316	4992
287	4118	317	5024
288	4147	318	5056
289	4176	319	5088
290	4205	320	5120
291	4234	321	5152
292	4263	322	5184
293	4292	323	5216
294	4321	324	5248
295	4351	325	5281
296	4380	326	5313
297	4410	327	5346
298	4440	328	5379
299	4470	329	5412
300	4500	330	5445
301	4530	331	5478
302	4560	332	5511
303	4590	333	5544
304	4620	334	5577
305	4651	335	5611
306	4681	336	5644
307	4712	337	5678
308	4743	338	5712
309	4774	339	5746
310	4805	340	5780

340		370	
341	5814	371	6882
342	5848	372	6919
343	5882	373	6956
344	5916	374	6993
345	5951	375	7031
346	5985	376	7068
347	6020	377	7106
348	6055	378	7144
349	6090	379	7182
350	6125	380	7220
351	6160	381	7258
352	6195	382	7296
353	6230	383	7334
354	6265	384	7372
355	6301	385	7411
356	6336	386	7449
357	6372	387	7488
358	6408	388	7527
359	6444	389	7566
360	6480	390	7605
361	6516	391	7644
362	6552	392	7683
363	6588	393	7722
364	6624	394	7761
365	6661	395	7801
366	6697	396	7840
367	6734	397	7880
368	6771	398	7920
369	6808	399	7960
370	6845	400	8000

400		430	
401	8040	431	9288
402	8080	432	9331
403	8120	433	9374
404	8160	434	9417
405	8201	435	9461
406	8241	436	9504
407	8282	437	9548
408	8323	438	9592
409	8364	439	9636
410	8405	440	9680
411	8446	441	9724
412	8487	442	9768
413	8528	443	9812
414	8569	444	9856
415	8611	445	9901
416	8653	446	9945
417	8694	447	9990
418	8736	448	10035
419	8778	449	10080
420	8820	450	10125
421	8862	451	10170
422	8904	452	10215
423	8946	453	10260
424	8988	454	10305
425	9031	455	10351
426	9073	456	10396
427	9116	457	10442
428	9159	458	10488
429	9202	459	10534
430	9245	460	10580

460		490	
461	10616	491	12054
462	10672	492	12103
463	10718	493	12152
464	10764	494	12201
465	10811	495	12252
466	10857	496	12300
467	10904	497	12350
468	10951	498	12400
469	10998	499	12450
470	11045	500	12500
471	11092	501	12550
472	11139	502	12600
473	11186	503	12650
474	11233	504	12700
475	11281	505	12751
476	11328	506	12801
477	11376	507	12852
478	11424	508	12903
479	11472	509	12954
480	11520	510	13005
481	11568	511	13056
483	11616	512	13107
483	11664	513	13158
484	11712	514	13209
485	11761	515	13261
486	11809	516	13312
487	11858	517	13364
488	11907	518	13416
489	11956	519	13468
490	12005	520	13520

520		550	
521	13772	551	15189
522	13824	552	15235
523	13876	553	15290
524	13928	554	15345
525	13981	555	15401
526	14033	556	15456
527	14086	557	15512
528	14139	558	15568
529	14192	559	15624
530	14245	560	15680
531	14298	561	15736
532	14351	562	15792
533	14404	563	15848
534	14457	564	15904
535	14511	565	15961
536	14564	566	16017
537	14618	567	16074
538	14672	568	16131
539	14726	569	16188
540	14780	570	16245
541	14834	571	16302
542	14888	572	16359
543	14942	573	16416
544	14996	574	16473
545	15051	575	16531
546	15105	576	16588
547	15160	577	16646
548	15215	578	16703
549	15270	579	16761
550	15325	580	16818

580		610	
581	16878	611	18666
582	16936	612	18727
583	16994	613	18788
584	17052	614	18849
585	17111	615	18911
586	17169	616	18972
587	17228	617	19034
588	17287	618	19096
589	17346	619	19158
590	17405	620	19220
591	17464	621	19282
592	17523	622	19344
593	17582	623	19406
594	17641	624	19468
595	17701	625	19531
596	17760	626	19593
597	17820	627	19656
598	17880	628	19719
599	17940	629	19782
600	18000	630	19845
601	18060	631	19908
602	18120	632	19971
603	18180	633	20034
604	18240	634	20097
605	18301	635	20161
606	18361	636	20224
607	18422	637	20288
608	18483	638	20352
609	18544	639	20416
610	18605	640	20480

640		670	
641	20544	671	22512
642	20608	672	22579
643	20672	673	22646
644	20736	674	22713
645	20801	675	22781
646	20865	676	22848
647	20930	677	22916
648	20995	678	22984
649	21060	679	23052
650	21125	680	23120
651	21190	681	23188
652	21255	682	23256
653	21320	683	23324
654	21385	684	23392
655	21451	685	23461
656	21516	686	23529
657	21582	687	23598
658	21648	688	23667
659	21714	689	23736
660	21780	690	23805
661	21846	691	23874
662	21912	692	23943
663	21978	693	24012
664	22044	694	24081
665	22111	695	24151
666	22177	696	24220
667	22244	697	24290
668	22311	698	24360
669	22378	699	24430
670	22445	700	24500

700		730	
701	24570	731	26718
702	24640	732	26791
703	24710	733	26864
704	24780	734	26937
705	24851	735	27011
706	24921	736	27084
707	24992	737	27158
708	25063	738	27232
709	25134	739	27306
710	25205	740	27380
711	25276	741	27454
712	25347	742	27528
713	25418	743	27602
714	25489	744	27676
715	25561	745	27751
716	25632	746	27825
717	25704	747	27900
718	25776	748	27975
719	25848	749	28050
720	25920	750	28125
721	25992	751	28200
722	26064	752	28275
723	26136	753	28350
724	26208	754	28425
725	26281	755	28501
726	26353	756	28576
727	26426	757	28652
728	26499	758	28728
729	26572	759	28804
730	26645	760	28880

760		790	
761	28956	791	31284
762	29032	792	31361
763	29108	793	31442
764	29184	794	31521
765	29261	795	31601
766	29337	796	31680
767	29414	797	31760
768	29491	798	31840
769	29568	799	31920
770	29645	800	32000
771	29722	801	32080
772	29799	802	32160
773	29876	803	32240
774	29953	804	32320
775	30031	805	32401
776	30108	806	32481
777	30186	807	32562
778	30264	808	32643
779	30342	809	32724
780	30420	810	32805
781	30498	811	32885
782	30576	812	32967
783	30654	813	33048
784	30732	814	33129
785	30811	815	33211
786	30889	816	33293
787	30968	817	33374
788	31047	818	33456
789	31126	819	33538
790	31205	820	33620

820		850	
821	33702	851	36210
822	33784	852	36295
823	33866	853	36380
824	33948	854	36465
825	34031	855	36551
826	34113	856	36636
827	34196	857	36722
828	34279	858	36808
829	34362	859	36894
830	34445	860	36980
831	34528	861	37066
832	34611	862	37152
833	34694	863	37238
834	34777	864	37324
835	34861	865	37411
836	34944	866	37497
837	35028	867	37584
838	35112	868	37671
839	35196	869	37758
840	35280	870	37845
841	35364	871	37932
842	35448	872	38019
843	35532	873	38106
844	35616	874	38193
845	35701	875	38281
846	35785	876	38368
847	35870	877	38456
848	35955	878	38544
849	36040	879	38632
850	36125	880	38720

880		910	
881	38808	911	41496
882	38896	912	41587
883	38984	913	41678
884	39072	914	41769
885	39161	915	41861
886	39249	916	41952
887	39338	917	42044
888	39427	918	42136
889	39516	919	42228
890	39605	920	42320
891	39694	921	42412
892	39783	922	42504
893	39872	923	42596
894	39961	924	42688
895	40051	925	42781
896	40140	926	42873
897	40230	927	42966
898	40320	928	43059
899	40410	929	43152
900	40500	930	43245
901	40590	931	43338
902	40680	932	43431
903	40770	933	43524
904	40860	934	43617
905	40951	935	43711
906	41041	936	43804
907	41132	937	43898
908	41223	938	43992
909	41314	939	44086
910	41405	940	44180

940		970	
941	44274	971	47142
942	44368	972	47239
943	44462	973	47336
944	44556	974	47433
945	44651	975	47531
946	44745	976	47628
947	44840	977	47726
948	44935	978	47824
949	45030	979	47922
950	45125	980	48020
951	45220	981	48118
952	45315	982	48216
953	45410	983	48314
954	45505	984	48412
955	45601	985	48511
956	45696	986	48609
957	45792	987	48708
958	45888	988	48807
959	45984	989	48906
960	46080	990	49005
961	46176	991	49104
962	46272	992	49203
963	46368	993	49302
964	46464	994	49401
965	46561	995	49501
966	46657	996	49600
967	46754	997	49700
968	46851	998	49800
969	46948	999	49900
970	47045	1000	50000

An Appendix concerning the deſcription and uſe of a gauging Rod or Inſtrument, by which alone may be found the Content of *any Wine, Oyle, Ale, or Beere,* VESSELL.

IT conſiſts of two Rulers of braſſe or wood, each being 37 inches in length; if they be of braſſe ½ an inch broad and ¼ an inch thicke, if they be of wood they ſhould bee each of them 6 tenthes of an inch broade, and 3 tenthes of an inch thicke, and at one end of each of them a ſocket of braſſe ſtrongly faſtened, to keepe them together when they are moved one upon another, and to be drawne out to any length: alſo there is a ſcrue-pinne, upon one of the ſockets to ſcrue them faſt

when you haue occasion; one of which sockets (*viz.* that which comes upon that flat side on which the gauge diuisions are and the inch measure) hath a slit in it that it may not hinder the sight of the gauge diuisions, nor the inch measure: the gauge diuisions are in all foure hundred and sixtie, every particular diuision whereof, standeth for one hundreth part of a wine gallon, so in all they are 4 wine gallons and 60 hundreth parts, and for the distinguishing of them they are figured by tens, from tenne to foure hundred and sixtie thus, 0|10, 0|20, 0|30, 0|40, &c. and betweene every one of those figures there is tenne diuisions or hundreth parts. These gauge diuisions are thus put on, upon the inside of one of the Rulers they are begunne, from one to sixtie, foure hundreth parts of a wine gallon, and they are to be set upon one side next the edge, and the inch measure on the other side next the other edge (that so the Diameter at the bung and at the head may bee taken in gallon measure and inch measure both at one instant without moving the Rulers) which gallon measure will extend to 16 inches and 8 tenths of an inch, then the Rulers are to be drawne out in length to 16 inches, and 8 tenthes, and screwed fast, and then the rest of the gallon measure

ſure and inch meaſure is to be put on upon the out-ſide of the other Ruler, the gallon meaſure to foure hundred and ſixtie, and the inch meaſure to the end of the Ruler.

Vpon one edge of each Ruler is ſet the line of numbers, that which is next your right hand numbred from one to fiftie, and that which is next your left hand from tenne to fiue hundred: upon the other edge of each Ruler is put a line, which for diſtinctions ſake I call a line of lengthes, beginning at 1 and ending at 48, which line is thus devided; betweene one and three by vnites, between three and ſix by twoes, or halues, betweene ſix and ten by fiues, and betweene ten and 48 by tens, the 48 ſtanding for 48 inches, and each particular diviſion after ten, from one tenth part of an inch, and from ſix to ten for one fift part of an inch; which lines are to ſaue the troubleſomnes of putting on and off, of hookes to come over the ends of the veſſell to take the length, and the thickneſſe of that Ruler that hath no diviſions on the outermoſt flat ſide, is to be cut away ſloping very neer all the thickneſſe of it, that it may come cloſſe to the bottome of the head in the inſide of the veſſell.

To gauge any veſſell by this Inſtrument.

Firſt draw out the Rulers in length to the end

the 64 hundreth parts of a gallō that are on the inside of the one Ruler, & there screw them fast then you must haue a narrow peece of brasse somewhat thicke of 4 or 5 inches long divided from the middest towardes each end, on both edges into tenthes of an inch, which must haue a handell to it to hold it by, which you must put in at the bung parrallell to the length of the vessell, and hold it by the handle, and then put in your gauging rod to the bottome of one of the heades, with the line of inches upward and bring your inch measure to the edge of it in the middest, and marke the inches and ten parts cut by it, then turne your Ruler to the bottome of the other head on the other side of the peece of brasse, holding it still without moving, and bring the same number of inches in the gauging rodde that you had before to the edge of the brasse on the other side, and if it fit not in the middest, apply your gauging rodde to the mid difference betweene the middest and it, and the number of inches and tenth parts shall be the diagonall line from the middest of the length, then measure the diameter at the bung both in inch measure & gallon measure, and also the diameter at the head in inch measure and gallon measure, then adde the gallon measure of the diameter

at the head, to twice the gallon measure of the diameter at the bung which summe keepe.

Then adde the diameter at the bung in inches, to the diameter at the head in inches, and take halfe the summe; then unscrue your Rules, and turne to the lines of lengthes, and bring halfe the summe of the diameters at the bung and head in inches right against the length of the diagonall line in inches, and the beginning of the first line shall in the second line shew ½ the length of the vessell betweene the heades in inches and tenth parts, which length seeke in the line of numbers ending with 500, then bring the vnite of the 50 line to that numbet in the 500 line, and looke the gallon measure in the 50 line, and right against it in the 500 line you shall find the content of the vessell:

Example.

There is a wine vessell the diagonall line from the middest of the bung hole to the bottome of one of the heades is 28,$\frac{1}{10}$ inches, the diameter at the bung in gallon measure is 0.76 that is ,$\frac{76}{100}$ parts of a gallon, in inch measure it is 18,$\frac{1}{10}$, the diameter at the head in gallon measure is 0.60, that is ,$\frac{60}{100}$ parts of a gallon, in inches it is neere 16,$\frac{1}{10}$ inches: the gallon measure of the bung twice, and the gallon measure

measure of the head once being added, is 2.12 that is two gallons, and $\frac{12}{100}$ parts of a gallon. the diameters in inch measure added is $84\frac{6}{10}$, the $\frac{1}{2}$ is $17\frac{3}{10}$ which I set from the first line of lengthes to $28\frac{6}{10}$ in the second line of lengthes, and the beginning of the first line shewes $22\frac{6}{10}$ and $\frac{1}{2}$ a tenth in the second line. Then I goe to the line of numbers, and set the vnite of the 50. line to this $22\frac{6}{10}$ and $\frac{1}{2}$ in the 500 line and right against the sumune of the gallon measure reckoned in the 50 line, in the 500 line, I finde 48 gallons for the true content of that wine vessell.

If you would know the content of this or any other vessell in beere and ale measure, there are two markes in the 50 line, the one a *W* at $272\frac{1}{4}$, the other an *A* at 231; then set *W* to the content in wine measure, and right against *A* you shall see the content in ale and beere measure, in the 500 line, which will be 40 gallons and $\frac{11}{100}$ parts of a gallon for the content of this vessell in ale and beere measure, and so of all other.

The second example of a wine vessell is mistaken, which is thus to be corrected.

against

againſt	570	is	16245.
againſt	346	is	5985.
againſt	453		10260.
gallon meaſure	126/347		561.
18 1/10 is 0.379			93980.
18 1/10 is 0.379			48|01.
gallon meaſure			
16 1/10 is 0.301.			

Sum is 1.059. for which I take 106, and finde 48 gallons and 01 hundreth part for the true content of that veſſell.

FINIS.